

REMARKS/ARGUMENTS

The requested references as noted in Paragraph 1 of the Detailed Action are enclosed along with a new IDS form.

The Specification has been amended as requested by the Examiner. In addition, several other amendments have been made to provide additional clarity and to correspond the specification with the amended claims. No new matter has been added. Replacement specification pages are attached.

Due to the extent of claim revisions, claims 1-18 have been cancelled and new claims 19-37 have been added. Acknowledgment of the allowability of prior claims 1-9 subject to amendment and allowability of claims 12 and 18 if rewritten to include the limitations of the base claim is also acknowledged.

Claims 19-27 correspond to allowed claims 1-9, and have been amended to comply with the rejection under 35 U.S.C. § 112 and to otherwise more clearly claim the invention. Note, particularly, the non-substantive change from "rigid-bottomed" to "rigid-bottom" throughout the specification and claims. The term "section" has been replaced with "element" as suggested by the Examiner.

Claims 30 and 36 correspond to cancelled claims 12 and 18. The new claims are not believed to differ substantively from the previously-allowed claims.

Cancelled claims 10, 11 and 13-17 were rejected as being unpatentable over Johnson '202 in view of Nusinoff and Kutsi. With regard to new claims 28, 29 - 35, and 37, applicant respectfully disagrees for the following reasons.

The claimed invention differs substantially from Johnson ('202) in that Johnson is, for all intents, a folding rigid boat with topsides that do not fold or collapse, so that the stored length of the boat shortens but not the volume. In addition, the hinges must be situated both on the uppermost extension of the topsides (i.e. gunwale) in order for the boat to fold, and outside the hull. In contrast, the hinge elements of the claimed invention are interior and below the uppermost extension of the topsides (i.e. gunwale).

Johnson's hinges must be in their precise position, so the folding scheme does not lend itself to a number of different boat configurations, as does the claimed invention. The position of the hinges on the gunwale and outside the hull places them in a vulnerable position from striking docks, boats or other objects whereas the hinge elements of the claimed invention are inside the boat and protected. In order for the boat to remain open and usable in a seaway, the bow and stern elements must be mechanically locked together, whereas the lower position of hinge elements of the claimed invention allow inflatable topsides (or a rigid gunwale element on flexible-sheet topsides) to make the unfolded boat stiff enough to utilize even without a locking mechanism. The mating bulkhead sections of Johnson must extend to the uppermost extension of the topsides (i.e. gunwale) to support the hinges and rigid topsides. The boat according to the claimed

invention can be lower or nonexistent to substantially free the interior for passengers or other arrangements, and allow the boat to fold into a package requiring a smaller volume.

In contrast, Johnson *must* utilize the waterproofing means carried by the bow and stern sections, whereas the boat according to the claimed invention may be constructed completely without waterproofing means at the joint.

Neither Nusinoff nor Kutsi supply the deficiencies of the Johnson reference. Adding elements from either the Nusinoff or Kutsi invention to Johnson do not result in a boat similar to boat as now claimed.

First, Nusinoff has invented a "boat bumper," not a flexible topsides. Nusinoff clearly states that this bumper is a device only to *protect* the topsides of a boat. Furthermore, on Figure 3, it clearly delineates the bumper (30) from the topsides (31). Nusinoff's bumper is situated on the uppermost extension of the topsides (i.e. gunwale), and the topsides are rigid, not flexible. Any extension of the topsides upward would be quite negligible, as these types of bumpers consist of extrusions of very small dimension--rarely more than a fraction of an inch in height. Their purpose certainly is not to extend the topsides upwardly.

In addition, the bumper is generally arranged in segments, which are not waterproof or even water resistant to the ingress of water from outside. Any upward extension of the topsides, as small as it might be, does not continue around the perimeter of the boat but remains in short sections with gaps between. Furthermore, the bumper is created using

a material that, although flexible to some degree, is not composed of a sheet material that could adequately fold.

Kutsi's seat also does not supply to Johnson the elements needed to teach or suggest the claimed invention. The claimed advantage of a sealed sole as described in the application is important for the following important reasons.

Although the Kutsi seat(s) might trap air to prevent a Kutsi craft from sinking outright, should the craft be capsized or otherwise filled with water, large areas of the boat's bottom would be filled with water until enough of the seat volume was submerged sufficiently to float the weight of the boat and payload. This would significantly lower the freeboard before the volume in the seats would be sufficient to float the vessel. The claimed invention's sealed sole, by contrast, retains the volume in the bottom of the boat. A simple drain through the transom, or loosening the centrally disposed joint, will allow the water to self-drain. For a Kutsi boat, the lower portions of the seat(s) would lack sufficient volume to allow any drains to function--as much water would try to make its way into the boat as would try to drain out.

Furthermore, if a boat according to Kutsi-Johnson capsizes, upon re-righting, it would scoop up a good deal of water, which would remain trapped in the hull. When a boat, as claimed, and fitted with the inflatable tube option capsizes, sufficient volume in the tubes makes it float high on the water upside down. As it rolls back upright, the topsides do not scoop up water. Quite the opposite: the boat rolls on the tubes and comes up

completely empty of water. Even if fitted with flexible fabric topsides in lieu of an inflatable tube, and fitted with a sealed sole of sufficient volume, the boat as claimed and described in the application would self-drain upon re-righting, as described above. In addition, the sole element of claimed invention retains a good deal more righting moment than a Kutsi boat no matter how much water is shipped because boat stability is dependent upon a shifting center of buoyancy (air volume) as the boat heels and tries to rise to the surface, combined with a center of gravity (weight) pushing down to form a righting lever arm. A boat with Kutsi's seat(s) loses substantial stability even with moderate amounts of water in the interior for two reasons. First, the outboard volume between the seats immediately fills with water, requiring the vessel to heel more before enough additional hull submerges to regain the air volume and righting moment.

In addition to losing righting arm from the loss of air volume outboard, there is an additional loss of righting arm because the contained water is added to the weight of the boat and it shifts the center of gravity to the low side. In contrast, the sole element of the claimed boat retains that air volume outboard, even with substantial amounts of water in the boat, allowing a claimed boat with a sole element to try to re-right, even if the water is not drained, as described above. This greater tendency to re-right shifts more contained water back towards the high side, which shifts the center of gravity uphill and again improves the righting arm. Only when a boat fitted with Kutsi seat(s) is well awash, will it regain the equivalent outboard air volume of a boat, as claimed, with sole. By this time,

the boat would be so heavy with water that extra strains are put on the structure, and the substantial volume of sloshing water will cause the boat to become dangerously unstable, making it much more likely to capsize than the claimed boat fitted with a sole. Furthermore, the sealed sole of the boat, as claimed, protects nearly the entire length of the hull against flooding from the underside should the bottom get inadvertently holed through collision.

Water coming through a hole would be retained in one of the compartments and the rest of the hull would remain floating high. Kutsi's seat(s) protect only a small portion of the bottom of the hull. If holed in most areas of the bottom, a Kutsi hull would sink a substantial amount before the seat volume would float the boat. Additionally, the Kutsi seat configuration severely limits the options for layouts in a Kutsi boat. The hull is necessarily divided which, except in very long boats, would prevent passengers from laying prone on the bottom of the boat in extreme conditions. Even in relatively common dinghy sizes from 8 to 10 feet, the claimed hull design allows passengers to lay prone if need be to significantly lower the center of gravity of the loaded vessel, which in a small craft, substantially increases stability. The double-bottom sole configuration, which is not dependent on bulkheads extending well up into the hull as on Kutsi, even allow seats to be molded into the sole that position passengers nearly on the bottom of the boat, allowing many configurations of the claimed boat, such as kayaks, not open to a boat with Kutsi-type seat(s). The option to position passenger weight so low markedly improves stability

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for FRB boats in all conditions. Finally, because the seat configuration in Kutsi requires a substantial height of bulkheads, such a boat with Kutsi-type seat(s) is severely limited in its ability to fold into a package with smaller volume.

Applicant now submits that the claims in the case are in condition for allowance. Such action is therefore respectfully requested at an early date. If the Examiner believes that issues remain for discussion, he is invited to contact the undersigned at the telephone number indicated below.

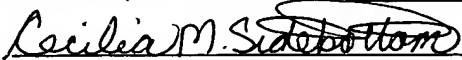
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I hereby certify that this correspondence is being deposited as first class mail in an envelope addressed to: Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on 07/23/2003.

 7/23/2003
Cecilia M. Sidebottom Date of Signature